

#### IN THE ABSTRACT

Described herein is a fuel-cell stack, which comprises a plurality of direct-alcohol fuel cells electrically connected together. Each cell has a miniaturized structure comprising a first electrode, a second electrode, an electrolyte set between the first electrode and the second electrode, means for conducting electrical current to the first electrode, and means for conducting electrical current to the second electrode. The miniaturized structure of each cell is made up of a plurality of layers set on top of one another, and the various miniaturized structures are associated in an unremovable way to a flexible substrate capable of being wound up in a roll.

(Figure 2)